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TITLE: Portable Cooler

INVENTOR: Edgar Hobbs, Jr.

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BACKGROUND OF THE INVENTION

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1. Field of the Invention

The invention generally relates to a portable cooler, and in particular relates to a battery operated portable cooler which may be easily carried by a user and which functions to cool various food and beverage items contained therein.

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2. Description of the Related Art

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Individuals traveling to and from locations may find it desirable or even necessary to maintain a variety of food and beverage items at a low temperature while in transit.

Additionally, while engaged in an outdoor activity such as picnicking, an individual will often need to have cold beverages or food available because certain beverages and foods taste better when cold, and additionally may need to keep food and beverage items cold in order to prevent said items from spoiling. Accordingly, there is a need for a portable cooler which is capable of maintaining foods and beverages at a low temperature so that they are more appetizing and also so that they do not spoil.

A variety of portable coolers have been devised to answer these needs. An interesting example is provided by United States Patent No. 6,253,570 to Lustig, which appears to show a portable cooler for carrying temperature sensitive medications such as insulin, having a temperature-sensing element and a display, for monitoring and displaying, respectively, the internal temperature of an insulated container. Furthermore, United States Patent No. 6,173,582 to Hixson appears to show a portable cooler for cans of beverages, having an insulated container having an inclined channel which connects a filling means to a dispensing means, and further having a preferably non-thermoelectric cooling means such as a "cold pack" filled with a chillable material positioned within the insulated container. Moreover, United States Patent No. 5,235,822 to Leonovich, Jr. appears to show a portable cooler in combination with an audio system mounted in a recessed cavity on a wall of an insulated container.

While these devices may be suitable for the particular purpose employed, or for general use, they would not be as suitable for the purposes of the present invention as disclosed hereafter.

## SUMMARY OF THE INVENTION

It is an object of the invention to provide a portable cooler which may be easily transported between locations, and  
5 which is not unduly large or heavy. Accordingly, the portable cooler described is small and lightweight, and may be easily transported between locations by the average adult.

It is another object of the invention to provide a portable cooler having means for maintaining the interior of  
10 the portable cooler at a constant temperature. Accordingly, a user is able to set a temperature at which the cooling device is activated. When the interior temperature is higher than the set temperature, the cooling device is activated to cool the interior, and remains activated until the  
15 temperature lowers to the set temperature, thereby providing a portable cooler having means for maintaining the interior of the portable cooler at a constant temperature.

It is yet another object of the invention to provide a portable cooler wherein the interior temperature of the  
20 portable cooler is readily determinable by a user. Accordingly, the portable cooler has a temperature display which selectively visually indicates the interior temperature of the portable cooler.

It is an additional object of the invention to provide a  
25 portable cooler which is not unduly expensive. Accordingly, the materials from which the portable cooler is constructed are readily available, and its cost is not prohibitive.

Further objects of the invention will become apparent in the detailed description of the invention which follows.

The invention is a portable cooler for selectively maintaining a variety of food and beverage items at a low temperature, comprising a substantially rectangular insulated container and a cooling device for cooling the interior volume of the insulated container. The insulated container has a storage compartment, a lid, and at least one hinge which pivotally attaches the lid to the storage compartment.

10 The cooling device has an associated air outlet vent for exhausting heat extracted from the interior volume of the insulated container during operation of the cooling device. The portable cooler has a display panel for enabling a user to control the operation of the cooling device, and has a

15 battery compartment for selective containment therein of at least one battery for powering the cooling device.

To the accomplishment of the above and related objects the invention may be embodied in the form illustrated in the accompanying drawings. Attention is called to the fact,

20 however, that the drawings are illustrative only. Variations are contemplated as being part of the invention, limited only by the scope of the claims.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, like elements are depicted by like reference numerals. The drawings are briefly described as follows.

FIG 1 is a perspective view of a portable cooler wherein an insulated container is in an open position.

10 FIG 2 is an enlarged perspective view taken generally in the area of circle 2 in FIG 1, illustrating a display panel of the portable cooler.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG 1 illustrates a portable cooler 10, for selectively maintaining food and beverage items at a low temperature, comprising a substantially hollow and rectangular insulated container 12 having an interior volume, and an associated cooling device 16 for cooling the interior volume. The insulated container 12 has a storage compartment 14, a lid 35, and at least one hinge 34 which pivotally attaches the lid 35 to the storage compartment 14. The storage compartment 14 has four walls 15, a bottom 14B, a top 14T, and a substantially rectangular opening 14D in proximity to the top 14T for selectively providing access to the items contained within the storage compartment 14. The four walls 15, the bottom 14B, and the lid 35, together define the interior volume of the portable cooler 10. Each of the walls 15 has an externally oriented surface 15E facing onto the exterior of the portable cooler 10, and an internally oriented surface 15I facing onto the interior volume of the portable cooler 10.

As illustrated, the insulated container 12 is substantially rectangular. It is additionally contemplated that the insulated container 12 may be provided in additional shapes. For example, a cylindrical insulated container 12 is contemplated, in which case, the insulated container 12 would have only one curved wall 15. The container 12 is insulated so that heat from the exterior of the container 12 will not

easily enter into the interior volume of the insulated container 12. The insulation may be provided by sheets of foam or polyurethane material.

The insulated container 12 has an open position wherein  
5 the lid 35 has been swiveled away from the storage  
compartment 14 upon the at least one hinge 34, and a closed  
position wherein the lid 35 has been swiveled toward the  
storage compartment 14 upon the at least one hinge 34 in  
order that the opening 14D at the top 14T of the storage  
10 compartment 14 is sealed by the lid 35. The insulated  
container 12 is selectively opened in order to insert and  
remove items from the storage compartment 14.

The electric cooling device 16 is positioned within the  
storage compartment 14. Air within the interior of the  
15 insulated container 12 is selectively cooled by the cooling  
device 16. The cooling device 16 has an associated air  
outlet vent 20 extending through one of the walls 15 for  
exhausting the heat which is extracted from the interior  
volume of the insulated container 12 during operation of the  
20 cooling device 16. It is contemplated that the cooling  
device 16 will preferably be a freon-based refrigeration  
system.

The portable cooler 10 has a display panel 22 for  
enabling the user to control the operation of the cooling  
25 device 16. As illustrated, the display panel 22 is  
positioned upon an internally oriented surface 15I of one of  
the walls 15. It is contemplated that the display panel 22



may be positioned at alternate locations on the insulated container 12. The display panel 22 has an activation button 28 for selectively powering the cooling device 16, a thermistor for sensing the temperature within the interior volume of the insulated container 12, a temperature display 26 in electrical communication with the thermistor of the cooling device 16 for providing a visual numerical indication 43 of the temperature as sensed by the thermistor, and a temperature control knob 24, capable of rotating in two opposing directions, for varying the temperature at which the cooling device 16 is selectively activated. The temperature display 26 is preferably a liquid crystal display (LCD). The display panel 22 has a set temperature mode, an existing temperature mode, and a temperature display button 36 for toggling between the two modes. The set temperature is the temperature above which the cooling device 16 is selectively activated. While in the set temperature mode, the user is able to vary the set temperature by rotating the temperature control knob 24. Rotation of the temperature control knob 24 in a clockwise direction raises the temperature above which the cooling device 16 will be activated. Rotation of the temperature control knob 24 in a counterclockwise direction lowers the temperature above which the cooling device 16 will be activated. While in the existing temperature mode, the user is able to view the temperature of the interior volume of the insulated container 12 upon the temperature display 26.

The display panel 22 is additionally provided with an "UP" button 40 and a "DOWN" button 42. The UP button 40 and the DOWN button 42 provide an alternate method for setting the temperature above which the cooling device 16 will be  
5 activated. In particular, to set the temperature above which the cooling device 16 will be activated by using the UP button 40 and the DOWN button 42, the user first presses the temperature display button 36 until the temperature is in the set temperature mode. The user then presses the UP button 40  
10 to raise the set temperature, or alternately presses the DOWN button 42 to lower the set temperature.

The portable cooler 10 has a battery compartment 30 for selective containment therein of at least one battery 32 for selectively powering the cooling device 16. It is  
15 contemplated that the at least one battery 32 will be larger than the battery 32 illustrated in the drawing figures.

The externally oriented surfaces 15E of two of the four opposing walls 15 of the insulated container 12 have handles 44 attached thereunto, for enabling the user to easily  
20 transport the portable cooler 10 by carrying the portable cooler 10 by the handles 44. The portable cooler 10 is lightweight and small enough to be easily carried by an average adult.

In use, the portable cooler 10 is carried to and from  
25 locations by the handles 44 of the insulated container 12. The bottom 14B of the portable cooler 10 is placed upon a horizontal support structure. The user powers the cooling

device 16 of the portable cooler 10 by depressing the activation button 28 located upon the display panel 22. The user sets the set temperature by pressing the temperature display button 36 until the temperature is in the set temperature mode, and then by rotating the temperature control knob 24. The user is able to readily determine the temperature of the interior volume of the insulated container 12 by pressing the temperature display button 36 until the display panel 22 is in the existing temperature mode. The heat which is extracted from the interior of the insulated container 12 during the cooling process is dissipated from the air outlet vent 20. The at least one battery 32 which selectively powers the cooling device 16 is removed from the battery compartment 30 and replaced with a new battery 32, as needed.

In conclusion, herein is presented a portable cooler having an electric cooling device for maintaining food and beverage items at a low temperature. The invention is illustrated by example in the drawing figures, and throughout the written description. It should be understood that numerous variations are possible, while adhering to the inventive concept. Such variations are contemplated as being a part of the present invention.